

# AGRICULTURAL CREDIT IN THE DOMINICAN REPUBLIC

A.I.D. PROJECT IMPACT EVALUATION REPORT NO. 58  
(Document Order No. PN-AAL-048)

by

Frank Araujo, Anthropologist  
(Sigma One Corporation)

Ana Maria Viveros-Long, Sociologist  
(Agency for International Development)

Jim Murphrey, Agriculturalist  
(Independent Consultant)

Assisted in economic analyses by

C.E. Youngblood  
L.E. Perez  
D.L. Franklin  
J.B. Leonard  
(Sigma One Corporation)

U.S. Agency for International Development

May 1985

The views and interpretations expressed in this report are those of the authors and should not be attributed to the Agency for International Development.

## TABLE OF CONTENTS

Acknowledgments

Foreward

Summary

Preface

Glossary

Map

1. Project Setting

2. Project Description

2.1 Agricultural Sector Loan I

2.2 Agricultural Sector Loan II

3. Project Impacts

3.1 Credit

3.2 Training and Institution Building

3.3 Research and Extension

3.4 Agricultural Economics, Planning, Evaluation,  
Data Collection, and Data Processing

3.5 Rural Infrastructure

3.6 Input Distribution

3.7 Summary of Impacts

4. Lessons Learned

Appendixes

A. Logical Framework of Agricultural Sector Loan II

B. Small Farmers and Food Production in the Dominican  
Republic

C. Statistical Tables

D. Methodology

Bibliography

## ACKNOWLEDGMENTS

Many current and former officials within various Dominican agricultural institutions provided candid impressions which served as the basis for working hypotheses for the fieldwork. Political and civic leaders also provided background information and critical appraisals of preliminary findings. Notable for his generosity in this regard is Dr. Roberto Castro of the Rural Development Office, provided valuable logistic support and access to documentation. Marion Warren and Roy Solem of AID and J. Malinoff and D. Franklin of Sigma One Corporation were likewise helpful in reviewing and editing the final draft. Finally, the greatest gratitude goes to the rural people of the Dominican Republic, who so graciously received the team into their homes.

## FOREWORD

This evaluation of two Agency for International Development (AID) loan projects carried out through the Dominican Republic's Agricultural Bank beginning in 1974 is part of a series of studies of five field-level impact evaluations that examine agricultural services activities worldwide. Other studies in the series include projects involving the Bangladesh Fertilizer Development Corporation, Korea's Ministry of Agriculture, the Tanzania Agricultural Development Corporation, and Paraguay's system of private credit unions (CREDICOOP). The common denominator in all the studies is an interest in approaches to and vehicles for service delivery. Of secondary concern is the type of service, that is, credit, extension, inputs, marketing, and so on.

Service delivery vehicles that have been scrutinized in the series include some that are exclusively in the public sector and others that are hybrids -- partly public, but with definite private sector characteristics. The range of services delivered by them is likewise broad -- from assistance with farm inputs to extension and marketing support.

This study, which presents an analysis of an agricultural credit activity pursued through a mixed public-private development bank, provides an interesting counterpoint to the Paraguay study, which focused on private sector credit unions. Dramatic contrast occurs on two levels: government policy, which was neutral toward agriculture in Paraguay but negative in the Dominican Republic, and organizational mode, which was very expansive in the Dominican Republic's Agricultural Bank but "bottom-line" oriented in Paraguay's CREDICOOP. Reading the papers in tandem can provide interesting insights to the subject.

## SUMMARY

In the mid-1970s, the U.S. Agency for International Development (AID) provided funds and technical assistance for two Agricultural Sector Loans to the Dominican Republic. These loans were extended to help alleviate chronic problems of rural poverty by providing credit and services to the country's small farmers. Through these instruments it was intended that modern production technologies would be adopted and that improved farm incomes would result. An important part of the effort involved a continuing program of training for professionals and technicians to staff the institutions in the agricultural sector.

The Agricultural Sector Loans enabled the Government of the Dominican Republic to increase the volume and number of loans to small farmers. The loan funds contributed to an ongoing training program that appears to have been generally effective; however, the newly trained individuals were not well utilized because the agencies in which they are employed were weak at the outset of the project and have become weaker since. Output of selected food crops produced by small farmers increased significantly, as

did the use of modern inputs. Greater use of credit may have stimulated these impacts, but the evidence is not clear. Direct provision of agricultural services by the public sector was ineffective and may have inhibited growth of the for-profit agricultural services sector.

Sustainability of the loan activities stands out as a major issue. Few, if any, of the project activities are being efficiently carried out, and positive gains have not been sustained. Some observers assert that given the nature of the institutions and the structure of economic and political incentives, the loans attempted to do too much for too many with too few resources. These projects highlight the difficulty of promoting development through subsidized credit and services. Furthermore, the loans reflect one of the fallacies of the sector approach in vogue at the time the projects were designed -- to provide for many interventions at once, rather than targeting one or two discrete activities.

The principal lesson learned from AID's agricultural services effort in the Dominican Republic is that human and financial resources cannot achieve meaningful impact within a nonsupportive policy and institutional environment. Rather, they simply become compensations for such deficiencies, softening their effect rather than overcoming it. As the project unfolded, economic, financial, and climatic crises reduced even further the Dominican Republic's ability to sustain the projects' activities. Ultimately, PL 480 Title I proceeds had to be used to prevent a complete collapse of some efforts.

Another lesson learned is that credit itself cannot generate agricultural development. It can only facilitate investment in available productive activities. When the intended beneficiaries lack such options, credit is of no use. In the Dominican Republic, except for rice, few productive investments for small farmers were available.

The final lesson is that incentives offered by the overall economic and developmental environment must be favorable to the goals of the intended assistance project. The Dominican Republic's policy of extracting resources from the agricultural sector at the lowest possible cost in favor of providing cheap food to urban wage workers was the basis for commercial, trade, and economic regulations harmful to domestic agriculture. The urban bias in policy was clear at the time the loans were planned. A move to a neutral structure of incentives might have enabled a more positive impact from AID's agricultural services projects in the Dominican Republic.

## PREFACE

The impact evaluation for the Agricultural Sector Loan projects in the Dominican Republic was undertaken in the first

quarter of fiscal year 1984. Fieldwork by the authors, with the assistance of Dr. Luis E. Perez of the Instituto Superior de Agricultura, was undertaken in October 1983. David L. Franklin assisted in the formulation of the scope of work at AID/ Washington and at USAID/Santo Domingo. Curtis E. Youngblood and Jerry B. Leonard assisted in the compilation and analysis of the economic and econometric data. Mr. Jim Murphrey was the team's expert on agricultural technology and the related institutions.

The evaluation team interviewed current and past political leaders regarding the setting, design, execution, and perceived impacts from the projects. Service delivery personnel in the private and public sector were also interviewed. These two groups constitute the "informed sources" cited in the report. Extensive USAID and public sector documentation also was reviewed and an econometric analysis was carried out. Interviews with many household members in the beneficiary group constituted the main source of information, however. It is their views that are synthesized in this report. The approach taken, therefore, relied more on sociocultural information than on a quantitative economic analysis.

## GLOSSARY

arroz                rice

CENCERI            Integrated Service Centers (Centro de Servicios de Integrados)

ENIGF                National Household Expenditure Survey

habichuela        field beans (*Phaseolus Vulgaris*)

IAD                  The Agrarian Institute

INESPRE            Institute of Price Stabilization (Instituto de Estabilizacion de Precios)

ISA                  Superior Institute for Agriculture (Instituto Superior de Agricultura)

mani                peanuts

platano            plantains

PROSEMA           Ministry of Agriculture Mechanization Service Center

RD\$	Dominican Republic pesos. RD\$1 = US\$1 at the official exchange rate; at the time of the study the unofficial exchange rate was RD\$1.8 to US\$1
SEA	Ministry of Agriculture (Secretaria de Estado de Agricultura)
tareas	unit of land area equaling one-sixteenth of a hectare
USAID	Mission of the U.S. Agency for International Development to the Dominican Republic
yuca	cassava (Manahot Esculenta)

## 1. PROJECT SETTING

At the time that Agricultural Sector Loan Projects I and II were designed and initiated, the Dominican Republic was characterized by widespread rural poverty. Most rural dwellers had incomes below that necessary to secure an adequate diet. Even though the gross domestic product (GDP) of the Dominican Republic showed outstanding increases (14 percent in 1967 and 23 percent in 1973), per capita increases in food crop production were small. An estimated 75-80 percent of the rural population was thus undernourished.

The problems of rural poverty, underemployment, and poor nutrition were exacerbated by Government policies that sought to provide cheap food for the urban areas. Traditionally, imported foods have provided a major portion of the diet of urban dwellers but have been a minor factor among rural people. Cheap food policies under price controls and an overvalued exchange rate tended to hurt farmers by lowering the value of their output without affecting their consumption costs significantly. For example, during the 1970s, the implicit tax on domestically produced rice caused its price to rise 15 percent above the price of imported rice.

The Institute for Price Stabilization (INESPRE) was created in 1969 in an effort by the Government to regulate the markets for food and agricultural products. While its statutory objectives are to regulate the prices of agricultural products in domestic markets, interventions have been concentrated in the markets for rice, edible oils, maize, and sugar. It intervenes in these markets by setting prices and by buying and selling products in domestic and international markets.

The retail price of the commodities in which INESPREE deals

are controlled by a separate official entity, the General Directorate for Price Controls. INESPRES is supposed to promote domestic food production, food security, and commodity price stability. At the same time, it covers its operating expenses from the gross margin between its sales and the purchase price for commodities. Retail price controls and the desire to hold down the urban cost of living force INESPRES to offer domestic producers prices for their crops that have been declining in real terms.

In the early 1970s, a group of Dominican agricultural professionals formulated their perceptions of the problems facing the agricultural sector: (1) a lack of credit and improved technology for farmers, and (2) institutional constraints to increasing agricultural production and farm incomes. It was believed that credit could provide the means to obtain improved technological packages (improved seeds, pesticides, mechanization, and fertilizers), which would then increase production and incomes. Institutional constraints to increasing agricultural production were seen as a lack of human capital, inadequate physical infrastructure, and insufficient planning and marketing research. There were shortages of trained agricultural workers in the public sector at all levels, from the offices of the Ministry of Agriculture to field technicians. Roads, transport, storage, and agricultural research facilities were woefully inadequate to the needs of a growing farm economy. Efforts were already underway to improve planning and market research capability with USAID assistance. One objective of this program was to train a body of agricultural specialists who could conduct analyses and advise the Government on agricultural policies.

## 2. PROJECT DESCRIPTION

### 2.1 Agricultural Sector Loan I

In 1974, an AID loan of US\$12 million dollars was extended to the Dominican Republic for purposes of increasing agricultural production, rural incomes, and employment through (1) expansion of credit availability to small farmers, (2) provision of educational opportunities and vocational benefits to small farmers, and (3) construction and improvement of rural infrastructure.

The direct beneficiaries of the loan program would be the small farmers receiving credit, improved inputs, technical assistance, and vocational training. There also would be indirect beneficiaries who would benefit from better market information, cheaper inputs, improved roads, increased food availability, and the employment opportunities generated by the expanded credit system.

In addition to the funds from the agricultural sector loan,

the Government was to provide nearly US\$19 million in additional lendable funds for a small farmer credit line. The Agricultural Bank would place a ceiling on loan amounts extended to large farmers, thereby increasing available credit to small farmers. The central Government would guarantee the loans in the small farm credit line so that, in principle, the Bank would assume no risk in lending to small farmers.

## 2.2 Agricultural Sector Loan II

In 1976, the Agricultural Sector Loan II of US\$15 million was approved. Its purpose was to increase small farmer productivity through (1) expansion of the range of public services provided to small farmers, (2) strengthening of agricultural planning capacities, (3) establishment of farm production support systems, and (4) establishment of a rural development program.

The main thrust of this second loan was institution building. In addition, the target group was redefined to include the rural poor while retaining an emphasis on the small farmer. Although the scope of the second loan appears to be broader than the first, it was largely devoted to the institutional buildup of the Ministry of Agriculture. Also, the emphasis on credit that existed in the first loan was somewhat reduced, although at US\$7 million, credit remained an important component.

Both loans were intended to enable the Ministry of Agriculture and the Agricultural Bank to administer the loans, to conduct market and production research, to carry out farm surveys, to collect and analyze agricultural statistics, and generally to improve the planning and policy analysis capabilities of these institutions. Programs in agricultural vocational training for extension agents and small farmers were to be established, as well as training programs for agronomists, agricultural engineers, economists, and other professionals. Finally, the loans would facilitate investment in physical infrastructure, particularly research station facilities and feeder roads.

## 3. PROJECT IMPACTS

The credit component appears to have been effective in delivering additional funds to small farmers, particularly rice farmers on irrigated lands but also those farming under less favorable resource conditions. The impact of such subsidized credit on productivity is not clear, however, although the yields of rice, beans, and other food crops produced by small farmers did increase during the period of the loans (see Appendix C, Table C-1). Whether these impacts on production and productivity were attributable to credit and the other project components or



to other factors independent of the AID-financed projects is uncertain. What is certain is that neither the credit program nor the institutional strengthening activities proved to be sustainable. The major long-term impact depends on the human capital component. This impact will be realized if highly trained professionals can be retained within the agricultural sector. At the present time most have left or have been expelled from the public sector institutions. The other service components were generally ineffective and nonsustainable, and as such they may have interfered with the development of a private agricultural services sector.

### 3.1 Credit

From a process point of view, the Agricultural Bank was effective in expanding and delivering credit to small farmers. From 1974 to 1978, total credit extended to the agricultural sector increased by 21 percent in real terms, with the Agricultural Bank expanding by 27 percent and commercial sources by 4 percent. AID funds represented about a third of the expansion in public sector credit. The Agricultural Bank made more than 33,000 new loans (exceeding the loan's target of 32,500 new loans each year), with most of these going to small farmers. The average loan size declined in real terms from about RD\$700 to about RD\$400. At the end of 1978, the small farmer credit lines represented 41 percent of the total loans in the Agricultural Bank's portfolio, with an average loan size of RD\$289. Some 83 percent of the Agricultural Bank's total portfolio was being allocated to small- and medium-size farmers combined.

The Agricultural Bank was both efficient and effective in its credit delivery procedures in that it managed to significantly expand its branch office network while keeping the increase in general expenses below the rate of growth of its portfolio and its client base. This expansion was not accomplished without problems, however. Borrowers experienced delays in loan approvals, and delinquency and repayment problems also increased. Roach reports that at the end of 1978, 62 percent of the loans associated with Agricultural Sector Loan I were delinquent. Nevertheless, the financial and management systems of the bank are considered adequate.

Many of the farmers who did use the agricultural loans complained about delays in receiving the funds, and others reported not receiving the loan funds for which they had qualified. In some cases, the delays forced farmers to use the money for purposes other than those for which it was intended. For example, one farmer wanted a loan to purchase inputs for his cassava crop. Because the loan came after the planting date for cassava, he used it to buy calves. Several farmers interviewed did not borrow any money from the Agricultural Bank, even though they had qualified for the loans. The reasons given were that the risks associated with borrowing were perceived as too large

given the expected return.

The need for credit by small farmers was overestimated in the design stage of the loan because alternative sources of credit had not been considered. These sources include loans from relatives, neighbors, intermediaries, landlords, and store owners. These loans are usually made in small amounts at high rates. Farmers continued to utilize such loans, saying in justification that the higher rates are offset by timely processing and lack of complicated procedures.

Despite these factors, substantial increases in lending to small farmers were achieved as a result of the two AID-financed projects. The cases of rice and beans are illustrative. Rice production grew at an average annual rate of almost 9 percent between 1971 and 1981 (see Appendix C, Table C-1). During the same period, bean production increased by 7.6 percent annually, although yields, areas sown, and production varied appreciably from year to year.

Loans to rice and bean farmers increased in volume and number during the project period. The number of rice loans increased by almost 9 percent, and the number of bean loans increased by almost 75 percent. Rice yields and rice farmers' incomes increased during the loan period in spite of declining real prices for their production.

This suggests a possible correlation between credit and production increases. Published analyses and our own econometric work failed to attribute any independent impact of the credit subsidy on rice production. No similar data were available for beans. Knowledgeable informants claim that the improvement in rice production came as a result of technical innovations that were already underway and that bean production increased as a response to higher prices. In the case of rice, productivity increases in the 7 years before the first loan averaged 8.7 percent per year, whereas in the 7 years since the first loan yield increases have averaged only 1.7 percent per year.

An alternative view is that the credit enabled these farmers to respond to technological and price incentives. Whether either view holds, an important aspect of the program is that it was not sustainable without external concessionary financing. Credit to small farmers has dropped off dramatically since 1980, with total number of loans down by 33,986 and average loan size up from RD\$269 to RD\$400.

Interviews with farmers from all regions of the country during October 1983 indicated that credit has not been the binding constraint in the small farmer subsector and that other uses of the loan funds might have provided longer lasting developmental impacts. The Agricultural Bank does seem to be effective as a credit institution, but without pricing and credit policies that mobilize domestic resources into productive uses, the credit itself is not having the desired effect. With the exception of the increase in rice production, it appears that the

loans' objectives have not yet been met; there were no worthwhile technological packages to be promoted, and had there been, the extension service would not have been effective enough to promote them. It also has been suggested by knowledgeable observers that the public sector's involvement in the provision of subsidized inputs (seeds and mechanization) interfered with the development of these services through the private sector. At the present time, these services are not being provided effectively by the public sector, and the continuing fiscal crisis for the central Government implies a further deterioration in its ability to perform in this area.

Finally, the structure of economic incentives facing agriculture was inconsistent with the stated objectives of the loan programs. Contrary to the assumptions underlying the loans, domestic pricing and exchange rate policies did not favor small producers in several instances.<sup>{1}</sup> Since the mid-1970s, the exchange rate has overvalued the currency from approximately 20 percent to 80 percent. This is a tax on exportables and a subsidy for imports which discourages the production of export crops as well as the production of import-competing crops (that is, domestic foods are placed at a competitive disadvantage with imported foods).

-----  
{1} See D.W. Larson, "The Effect of Price and Credit Policies on Dominican Republic Agriculture" (draft), September 1982; and D.L. Franklin, Agricultural Incentives in the Dominican Republic (Sigma One Corporation, July 1983).

### 3.2 Training and Institution Building

The loans helped to provide training at professional, technical, and farmer levels, but failed to contribute to the development of self-sustaining institutions. During the first phase of Loan I, 27 students were sent to 10 U.S. universities for advanced training in fields such as agricultural engineering, agricultural economics, agronomy, soil sciences, plant pathology, and forestry. Technical training also took place in Dominican institutions, and a series of courses in rice production was given to farmers at the rice research facilities in Juma. These included 5 to 8 short courses conducted each year for groups of approximately 40 farmers. The Ministry of Agriculture has also given similar courses in environmental awareness at selected sites throughout the country.

Short-term training in rice production was effective, but other short-term training did not appear to make a lasting impact. Some areas of emphasis in which training was conducted show promise, such as appropriate technology for coffee and cocoa development, although these two activities are being carried out with World Bank financing. Courses and informal training in various nontechnical areas, such as organization of the rural sector, rural administration, and development of agricultural

services, have had little impact. It is believed that these training efforts were not directed at a high enough level within the agricultural institutions.

Several programs in professional training were started prior to the loan programs. Students in several U.S. universities pursued advanced degrees in agricultural fields. Consequently, a secondary objective of the projects was to create a means for utilizing the services of these trained individuals by building and improving the agricultural institutions. The primary institutions involved were the Ministry of Agriculture and the Agricultural Bank -- the two institutions designated to implement the programs generated by the two agricultural loans.

The Agricultural Bank had a commercial infrastructure with individuals in key decision-making positions who were skilled and trained in managing a corporate structure. Thus, the policies initiated from higher level positions were channeled through a well-coordinated administrative system. This feature is understandable, because a great deal of the professional education of banking personnel includes training in office management, policy planning and execution, and development of administrative skills. The Agricultural Bank was quickly mobilized to carry out the new lending policies in the form of small farmer credit, because it had an institutional infrastructure with well-trained personnel already in place.

The Ministry of Agriculture, on the other hand, did not have a well-defined bureaucratic structure. Individuals placed in key positions were there largely because of their political alliances and not necessarily because of their professional capabilities or administrative skills. The result was an institution with few or no effective channels of communication among its members and without a capacity for planning or implementing agricultural policies or programs.

Problems at the Ministry of Agriculture, especially the absence of training in office management and low salaries, were not resolved by the AID training and institution-building efforts. Rather, the size of its bureaucracy doubled through the recruitment of new personnel, creating a large institution with numerous personnel but no continuous financial support for implementing programs. Organizational infrastructure must be constructed and developed before professionals are placed in an institution. Unfortunately, the programs for the development of human capital were planned and underway before the institutional framework was ever designed.

The loans seem to have had both positive and negative impacts on the Secretariat of Agriculture. Divided into many small parts, the loans appear to have been designed to give almost every department and activity in the Ministry of Agriculture a "little bit of the pie" to help them with budget support. As a result, funds were directed to support a wide range of activities within the Ministry of Agriculture, including the establishment of many new project-related positions. For example, the

Integrated Service Centers (CENCERI) project alone has approximately 60 technicians, 18 in the national office and the remainder in the field. Supporting these new positions is a direct additional strain on the Ministry of Agriculture budget. The AID support has stopped, but the Ministry of Agriculture still employs the people. The Ministry of Agriculture has increased from about 7,000 employees in the mid-1970s to over 11,000 employees now. With this large increase in the number of staff, partially caused by USAID loan-funded assistance, the 1984 proposed Ministry of Agriculture budget indicated that a very high percentage of the budget would have to be used for personnel, leaving little remaining for program support. With continuing fiscal austerity, the shortfall in program funds will become even more serious.

### 3.3 Research and Extension

There was little evidence that useful research has been conducted as a result of the AID sector loans. Indeed, research capability in the Dominican Republic has deteriorated to alarmingly low levels. Few farmers interviewed by the evaluation team mentioned receiving assistance from Ministry of Agriculture extensionists, who function as Government advisers on where to obtain inputs. This is not surprising since the level of funding for adaptive research amounted to only US\$1.25 million from the second Agricultural Sector Loan. Overall, research and extension activities represented less than 5 percent of the project resources. Agricultural research activities represent less than 1 percent of the total public sector budget for agriculture.

The staff of the research department of the Ministry of Agriculture is qualified to carry out a successful applied research program in technology testing and adaptation. However, this department reflects the lack of institutionalization seen in other parts of the public agricultural sector -- lack of funds, lack of communications and documentation, and lack of planning and evaluation. The research being undertaken by the department is irrelevant to the problems of the small farmers of the country.

### 3.4 Agricultural Economics, Planning, Evaluation, Data Collection, and Data Processing

Some of the support services within the Ministry of Agriculture improved as a result of the loan assistance. The departments of economics, planning, evaluation, and data collection and processing have become well organized and were doing a creditable job of offering the sector essential agricultural services during the period of the loans. However, much of that capability has been lost during the past year, so the lasting impact appears to be low.

The loans contributed to other ongoing USAID- and AID/ Washington-funded planning and analysis activities. As a whole, these activities contributed to the development of capabilities in data collection, processing, and analysis. They failed to develop a capability in policy formulation and analysis.<sup>{2}</sup> This effort, too, was not sustainable. For example, the production of high-quality publications has ceased since 1979. Plans and budgets are still being prepared, but little current data and almost no analyses are available.

-----  
{2} James T. Riordan et al., Evaluation of Agriculture Sector Activities in Latin America and the Caribbean (ABT Associates, Inc., June 1982).

### 3.5 Rural Infrastructure

The principal activity under this loan component was to improve the capacity of communities to identify and execute small, self-help infrastructure projects (e.g., roads and canals). This effort was not effective because of the lack of a coherent and continuous strategy within the Ministry of Agriculture in outreach and promotion, and it was not well coordinated with other Ministry activities. The only meaningful impact of the rural infrastructure program was the construction of approximately 100 miles of new rural roads. Total project resources for this activity included about US\$4 million from both loans and counterpart funds.

### 3.6 Input Distribution

This project was to facilitate the distribution of modern inputs of production to increase yields and farmers' incomes. The use of improved seed, fertilizers, insecticides, and fungicides increased significantly during the loan assistance period. Increased credit availability allowed more farmers to purchase inputs. The distribution system of the inputs changed drastically. Private distributors opened outlets in more remote areas, and the Agricultural Bank and the Ministry of Agriculture opened more sales outlets of their own in key target areas. Input sales increased and the farm input supply business became highly competitive.

It is still unclear whether the loans stimulated growth in the rice seed industry production and distribution system. Two large private seed companies, as well as the Ministry of Agriculture Rice Center, are now producing seed. Some claim that recent growth in the private sector seed industry was due in part to the research, technical assistance, and bank credit made available to small farmers through the AID project. There are other claims that such a development would have taken place without any stimulus from the large loans. Undoubtedly, the loans shifted the demand for seeds toward smaller farmers.

Certainly the additional credit and institutional support was not deleterious, and it may have facilitated an ongoing development process.

The private sector has developed a sorghum seed industry that is now serving an increasing number of small farmers. It would be difficult to discount any effect from the loans in this outcome for the same reasons given above. Credit would increase the demand for improved seed so long as the use of improved seeds in any given crop were profitable. Thus, the question remains: Were there profitable activities in which the small farmers could invest the proceeds of their loans? If the answer is yes, then the impacts must have been positive.

As indicated earlier, higher levels of technology are being applied only to certain crops (rice, sorghum, and some vegetable crops), and these are produced with "packages" of relatively high technology inputs. The technology being applied to traditional food crops such as plantain, corn, and beans is quite primitive. The loan seems to have had little or no impact on the use of inputs for traditional crops.

Mechanization is a special case of possibly deleterious impacts from the project activities. During the loan assistance years, mechanization did not appear to improve at the small-farm level. In fact, the situation deteriorated because of the establishment of the Ministry of Agriculture Mechanization Service Center (PROSEMA). The farmers were told that the Ministry of Agriculture and the Agrarian Institute would provide land-preparation assistance. Loan funds were provided to buy equipment to be used for that purpose. Many of the tractors were not workable because of a lack of spare parts, gasoline, tires, and so forth. When the tractors were usable, they often arrived weeks late, forcing the farmer either to plant late or to shift to a different, less productive crop.

Over time the influence of the loan-supported Ministry of Agriculture machinery program promoted a farmer dependency on the Government. In effect, the Ministry of Agriculture and Agrarian Institute mechanization program squeezed out the private sector. Now that Government agencies are no longer providing the needed and promised services, private sector equipment companies are beginning to reappear.

In the case of beans, virus-free seeds were the principal component of the technological package to be promoted by the loan projects. During the loan period, the adoption of this input increased from 11.8 percent of producers to 28.3 percent of producers. It has been reported, however, that farmers' confidence in the system has dropped off in recent years because the seeds proved to be of low quality. Availability was not uniform in respect to demand across the country, and there was low recuperation of credits extended in the form of seeds, so the system could not be sustained. Some high-level informants report that the private sector had been more effective at delivering clean seed and that the public sector activities inhibited the

performance of the private sector. Currently, about half the eligible farmers receive seeds through public sector agencies.

### 3.7 Summary of Impacts

The Agricultural Sector Loans enabled the Government of the Dominican Republic to increase the volume and number of loans to small farmers during the period of the loans, but the number and real value of the loans dropped dramatically at the end of the project. The loan funds contributed to an ongoing training program; however, for the most part newly trained individuals were not effectively utilized because their parent institutions (with the exception of the Agricultural Bank) were weak. Output of selected food crops produced by small farmers increased (e.g., rice by 21 percent and beans by 5 percent), and the use of modern inputs rose. Increased credit may have stimulated these impacts, but the evidence is not clear. At the same time, the output of all traditional food crops (except for cassava) declined. Some of the decline must be attributed to the devastation from Hurricane David in 1979. The direct provision of services by the public sector was ineffective and may have interfered with an evolving private sector.

During the principal period of project activities under the two loans (1976-1980), per capita agricultural output and per capita food production remained almost constant. These two indicators dropped in 1977 and recovered to their original levels in the 1978 to 1980 period. The real rural wage increased by 21 percent.<sup>{3}</sup> Food grain self-sufficiency increased by 7 percent and the real value of food imports increased by 52 percent. The share of agriculture in national income declined from 17.6 percent to 16.7 percent, while per capita GDP grew by 6 percent. Estimates of the prevalence of second- and third-degree malnutrition (by the weight-for-age criterion) ranged from 11 percent to 24 percent in 1976, depending on the region. For 1982, the national estimate is 12.1 percent, with some regions as high as 20 percent. If there has been improvement in nutritional status, it has been slight. Measured unemployment has remained around 20 percent. At the present time, the country is suffering from a severe macroeconomic crisis of multiple origins, including high fiscal deficits arising from the maintenance of a large bureaucratic apparatus and inefficient public institutions.

The agricultural sector loans probably had little impact (positive or negative) on the broad-based problems of the Dominican Republic. Had the planning and analysis activities within the Ministry of Agriculture remained viable, they could have contributed to the policy analyses that are needed to direct the agricultural sector toward a more efficient use of domestic resources. An opportunity to develop effective institutions, which are now desperately needed, was wasted.

-----  
{3} Norberto Quezada, "Endogenous Agricultural Price and Trade



Policy in the Dominican Republic," Ph.D. dissertation, Purdue University, August 1981.

#### 4. LESSONS LEARNED

The lessons learned from AID's effort to develop agricultural services in the Dominican Republic are not new, but they are worth repeating. The principal lesson is that human and financial resources cannot achieve meaningful impact in a policy and institutional environment where they merely become compensations for structural deficiencies. AID resources cannot be the driving force in a country's entire agricultural sector; they can only be used to "leverage" policy and institutional reform toward self sustaining local development. In the Dominican Republic, the Agricultural Sector Loans continued a process of providing resources for operating and staffing an inadequate institutional framework in a nonfavorable policy environment. In several cases, AID-funded projects depended on each other for support and collaboration rather than on autonomous initiatives. Subsequent economic, financial, and climatological crises further reduced the host country's ability to sustain the projects' efforts, and PL 480 Title I proceeds had to be used to prevent a complete collapse of some efforts.

Another, now widely known, lesson worth repeating is that agricultural credit is of no use unless there are productive uses to which it can be applied. Except for rice, few productive investments for small farmers were available in the Dominican Republic. Even in the case of rice, investment productivity was much restricted by the country's pro-urban price control and exchange rate policies. Signals that this was the case could have been seen in the recurring decapitalization of the Agricultural Bank and in the very slow growth of private agricultural credit in the decade prior to the loans. Under these conditions, the credit component of the loans became a transfer payment to many of the recipients of loans.

Finally, the incentives offered by the overall economic and developmental framework must be favorable, or at least not counter, to the goals of the intended assistance. The Dominican Republic's interest in extracting resources from agriculture and feeding the urban wage worker were clear and longstanding. The country's basic commercial, trade, and economic policies were biased against domestic agriculture.

The public sector's role in the markets for rice, edible oils, and maize has distorted the structure of incentives facing domestic producers. In the case of rice and edible oils, the prices faced by domestic producers have been below import parity at the parallel exchange rate. Rice prices could have averaged 10 percent higher during the last 8 years with relatively little impact on the cost of living of urban consumers, while causing significant improvements in domestic supplies and rural incomes.

## APPENDIX A

### LOGICAL FRAMEWORK OF AGRICULTURAL SECTOR LOAN II, AID/DOMINICAN REPUBLIC March 8, 1976

#### NARRATIVE SUMMARY

##### PROGRAM OR SECTOR GOAL

To improve living standards of the rural poor.

##### PROGRAM SUBGOAL

To increase the level of agricultural productivity, with particular emphasis on the needs of the small farmer.

##### OVERALL PROJECT PURPOSE

To expand the range of public activities undertaken in the agricultural sector, with emphasis on those providing services to the small farmer.

##### PROJECT PURPOSE I

To strengthen the agricultural sector planning, coordination, and evaluation capability of the Ministry of Agriculture and to involve other professional agriculturalists in the agricultural development process to increase the supply of agricultural technicians.

##### Purpose I Outputs

1. Agricultural sector planning personnel trained.
2. National agricultural data bank storage capacity expanded.
3. National Documentation Center established.
4. Reading rooms established (for dissemination of research and analysis).
5. Agricultural Research Council established and coordinated. Initial research projects in agricultural sciences undertaken by agricultural professionals in universities.

6. Curricula, facilities, and staff at agricultural schools of participating universities in place and capable of supporting required student output.

#### Purpose I Inputs

1. Annual disbursements by supplement:

- Economic analysis and planning
- Data collection and evaluation
- Professional education

2. Inputs by source:

- Personnel
- Equipment and supplies
- Vehicles
- Vehicle operation and maintenance
- In-country travel and per diem
- Training
- Technical assistance, long-term
- Technical assistance, short-term
- Project operations
- Contingency
- Other

#### PROJECT PURPOSE II

To establish an integrated small farm production support system to provide improved technological, production, educational, and marketing resources and services.

#### Purpose II Outputs

1. Ministry of Agriculture personnel trained.
2. Sample soil surveys completed.
3. Soil fertility trials conducted.
4. Soil classification analysis conducted.
5. Soil terracing and conservation accomplished.
6. Adaptive research trials underway.
7. Improved seed produced and distributed.
8. Production packages distributed.

9. Expanded farm survey system underway.
10. New vocational training centers established; additional farmers trained.
11. Suitably located, adequately staffed marketing centers established.
12. Marketing and price information distributed to producers.
13. Standardized weights and measures established.
14. Satellite offices of Agricultural Bank in operation.
15. Group lending office established in Agricultural Bank.
16. Agricultural Bank accounts computerized and administration regionalized.

#### Purpose II Inputs

1. Annual disbursements by supplement:
  - Production technology development and distribution
  - Vocational education
  - Farm services
2. Inputs by source:
  - Personnel
  - Equipment and supplies
  - Vehicles
  - Vehicle operation and maintenance
  - In-country travel and per diem
  - Training
  - Technical assistance, long-term
  - Technical assistance, short-term
  - Project operations
  - Construction/remodeling
  - Credit
  - Contingency
  - Other

#### PROJECT PURPOSE III

To establish a viable and comprehensive rural development effort within the Ministry of Agriculture.

#### Purpose III Outputs

1. Part-time employment generated.

2. Personnel trained.
3. Infrastructure projects in place.
4. Local self-help community development committees formed.

#### Purpose III Inputs

1. Annual disbursements by supplement:
  - Rural area development agent program
  - Rural infrastructure development
2. Inputs by source:
  - Personnel
  - Equipment and supplies
  - Vehicles (motorcycles)
  - In-country travel and per diem
  - Training
  - Project operations
  - Infrastructure
  - Contingency
  - Other

## APPENDIX B

### SMALL FARMERS AND FOOD PRODUCTION IN THE DOMINICAN REPUBLIC

#### 1. METHODOLOGY

The contentions of this report are derived from data obtained from primary and secondary sources. The data that provide the basis of this appendix come from field interviews with farmers, agriculturalists, and other people in urban and rural areas of the Dominican Republic. Most of the time spent in the field was concentrated on interviews and discussions with small farmers and their families. Over 250 small farmers were visited at their homes and worksites throughout the country.

Results of field interviews are offered from two perspectives: observations made by the interviewer and viewpoints expressed by the people interviewed. Both perspectives can be misleading and must be evaluated carefully. It should be mentioned that the Dominican rural dwellers were very open and frank when discussing their problems, and their observations lead us to conclude that the rural dwellers have not previously been sought out to any extent.

This series of field interviews was not intended to be and is

not offered as a representative sample of Dominican farmers. However, it is a cross-section of rural dwellers found throughout the country, one that provides useful information as well as a means of understanding the farmers' points of view. For example, throughout the interviews, the views expressed by farmers in one region were invariably shared by farmers in other regions. The information provided by these rural dwellers was very consistent. To cite specific examples, most people (over 90 percent) reported their economic conditions to be worse than they had been previously. A similar percentage of respondents stated that a lack of water was their greatest agricultural problem.

Because the field sites were visited by car, the individuals interviewed were those who lived relatively near a road. However, every effort was made to talk to many different kinds of farmers; impoverished and well-to-do individuals were sought out as well as those between these extremes.

All household members were interviewed; equal numbers of men and women were interviewed. Children were also sought out; frequently, the physical appearance of children provided the most useful clues for assessing the economic status of farm households. Sadly, it is noted that most children appeared to be severely undernourished and were very poorly clothed.

## 2. BACKGROUND

### 2.1 Geographical Factors

The topology of the island of Hispanola interacts with prevailing marine climatic conditions and creates three climatic zones. In the two major mountain ranges of the Dominican Republic, the Cordillera Septentrional in the north and the Cordillera Central in the central regions of the country, medium-to-high annual levels of rainfall occur. The areas are predominantly forested and the land is not cultivatable. This rainfall pattern continues along the northern or windward side of the island and down through the fertile Cibao Valley between the two major Cordilleras. These high and regular levels of annual rainfall also contribute to the availability of large amounts of groundwater for agriculture.

The southwestern slopes of the Cordillera Central and the regions beyond to the west and to the south are more arid, with irregular, low-to-medium levels of annual rainfall, and lesser amounts of groundwater.

On the eastern side of the Cordillera Central is another region which, because of the absence of high mountains, experiences annual rainfall at a level lower than that occurring in the north-central region but more regular in pattern than rainfall in the southwestern region.

The country is crisscrossed by a number of rivers that provide water for crop production but are not used for transportation to any extent. There is a greater concentration of waterways in the north-central and eastern regions.

Several patterns of deforestation are found throughout the mountain regions of the country. Previously, there existed a lumber industry that harvested and exported hardwoods, but this industry has depleted the supplies and is no longer active. The present pattern is one of overuse of the forest resources by rural residents who cut trees for firewood. This pattern of deforestation has created severe drainage and runoff problems throughout the country and has been particularly acute along the southwestern slopes of the Cordillera Central, causing seasonal flooding and increasing soil salinity in farm lands.

These three geographical areas -- north-central, southwestern, and eastern -- roughly correspond to three diverse agricultural zones. Within each zone are found differing patterns of crop production and farm and community organization. Land availability for agricultural production is scarce. Prime areas of production have been taken over by the larger farmers, and smaller farmers have filtered into peripheral areas less suitable for agricultural purposes.

The Cibao, a large fertile valley in the north-central region, is an area of diverse food and cash-crop production. It is the region with the greatest available amount of groundwater and, consequently, has experienced the most extensive irrigation development. The largest number of small farmers in the country are concentrated here, and the Cibao has been the most active area for agrarian reform and land redistribution.

The eastern region is one dominated by large sugar cane plantations and cattle ranches. Food production is found throughout the region, but it is pursued on farms that are located in areas peripheral to the large agribusiness concerns.

In the southwestern part of the Dominican Republic, the pattern of production differs greatly from that of the other two regions. In the Cibao and in the eastern regions, farmers can potentially produce enough to feed their families on a small farm of less than 5 hectares. The farmers in the arid southwestern region around the towns of Neiba, Pexdernaes, Jimani, San Juan de la Maguna, and Elias Pina are severely restricted by the lack of water, soil erosion, soil salinity, and other conditions. Land requirements for production are greater and the climatic conditions more perilous. Not surprisingly, one encounters greater evidence of poverty in this region.

To summarize the geographical and environmental considerations, there are three diverse agricultural zones, the north-central (essentially the Cibao Valley), the eastern, and the southwestern. The Cibao is extensively settled, with the largest number of farmers and rural communities; it enjoys a regular, medium-to-high level of annual rainfall, the greatest availability of groundwater

for agricultural use, and has been the most active site of small farmer relocation through the agrarian reform programs. The eastern region has a medium-to-low, but regular, level of annual rainfall, less available groundwater, and less extensive patterns of small farms due to the presence of large agribusiness sugar cane farms and cattle ranches. The southwestern region is more sparsely populated, has less available groundwater, an irregular, medium-to-low annual level of rainfall, more extensive environmental degradation, and consequently greater levels of poverty.

The pattern of land use and agrarian culture in the Dominican Republic is best understood in terms of how the physical geography has interacted with the culture. In order to understand this interaction, an awareness of the ethnohistorical background of Dominican agriculture is necessary.

## 2.2 Ethnohistorical Factors

The Dominican Republic was originally settled by the Spanish. The country has had a long history of unstable political conditions since its independence in 1844 and has had foreign intervention up until very recent times.

The ecological factors described above have influenced sociological patterns and the political economy of the Dominican Republic. The erratic patterns of rainfall throughout the Greater Antilles make the cultivation of most types of crops quite risky. An exception is sugar cane, which grows well in the island environment. This crop has emerged in response to continuing demands in the world market for sugar and rum. Traditional patterns of cultivation have been dominated by plantation agriculture characterized by large sugar cane, banana, and cattle producing operations owned by individuals or families. This type of agriculture is highly dependent on sources of cheap labor. Since the indigenous population, the Taino or Caribbean Indians, had died out by the 1500s from the ravages of disease, massacres, and exploitation, slaves were brought from Africa to fill these labor needs.

Slaves were given small plots of land to cultivate their own food by the plantation owners. This pattern of land use continued until the slave revolts of 1792 and the subsequent Haitian invasions. The liberated slaves who constituted this rural labor force became small peasant farmers who had certain privileges to the land on which they lived. However, they were still linked to the large plantations, because they had to pay rents in the form of labor and produce. This exploitation probably led Dominicans to avoid working as sugar cane cutters. The greater portion of sugar cane cutting eventually was taken over by poor immigrant laborers from Haiti. The prevailing pattern that resulted was one in which the peasants produced food crops on small parcels of marginal land (or at the fringes of marginal land) on the large estates and supplemented their meager



farm incomes by working as seasonal laborers on the large sugar cane and livestock plantations.

A rural society emerged in which there were rural wage earners and an aristocracy comprised of plantation owners. As the rural population increased, patterns of rural migration increased; landless and disinherited peasants moved into areas that offered greater economic promise.

The urban areas were either exporting sites or staging centers for agricultural commodities to be transported to processing or export centers. The commercial centers that supported the industrialization and export of sugar and its products, most notably rum, provided employment for rural migrants. A new class of entrepreneurs and merchants thus emerged. Because food production was small scale and marginal to the large-scale cultivation of export crops, it was cheaper for the merchant class to import foods to feed the growing urban population. Wheat, for example, is not grown on the island and is imported cheaply for that large portion of the urban population who are European immigrants accustomed to bread as a primary staple. The traditional farm diets consisted mainly of yuca (manioc), bananas, and plantains, but the greater use of imported grains suited the palate and cultural tastes of the urban population group.

The class structure that emerged was essentially a landed gentry with a landed peasantry and a landless labor force in the rural areas, and a class of merchants within an urban labor force. All were closely tied economically to the export of sugar and sugar products. When Trujillo seized power in the 1930s he confiscated many of the estates belonging to the landed aristocracy. However, the influential families survived either by supporting Trujillo's regime or by managing commercial and export interests.

The impact of this shift from colonial plantation agriculture had little beneficial effect on the rural and urban poor. Some free education and supplemental food programs were controlled, and the seasonal influx of Haitians to work in the cane fields was shut off by the military. This action created a closed rural society with little opportunity for the landed peasantry to improve household production or for the landless labor force to seek better wage-earning opportunities. The rural dwellers were thus compelled to follow their same pattern of marginal production. They were encouraged to have large families to increase the available labor force.

The death of Trujillo in 1961, along with the subsequent expulsion of the Trujillo family and the revolution in Cuba, changed conditions considerably. The large sugar cane estates of the Trujillo family were taken over by the Government, and the rich farm lands in the Cibao Valley were divided into parcels for redistribution among farmers. The agrarian land reforms were to promote social stability in the rural areas. The production of food was still taking place on small marginal farms, and there

was still a cadre of influential land owners who had survived Trujillo's oppressive tenure. These individuals controlled the import and export trade and exercised great influence on Government policies. However, the threat of a Cuban-type revolution in the Dominican Republic still loomed; hence, reforms for the rural poor had to be made.

Political power in the Dominican Republic shifted from the army to the presidency of Joaquin Balaguer. Much of this power was wielded by a group of urban agribusinessmen who had strong economic interests in maintaining an export-oriented agricultural system and who maintained strong links to the outside, primarily to the United States. This group exercised control through the military and through the church; members of influential families held important positions in the Catholic hierarchy. Urban instability and other factors prompted a U.S. military intervention in 1965. This intervention supported the economic status quo, and as a result, there was little or no change in the socioeconomic conditions facing the rural poor.

In 1981, some 2.7 million people constituting 385,000 farm families lived in rural areas. Of these, 315,000 lived on farms smaller than 4.9 hectares, 63,000 on farms between 5 and 50 hectares, and 7,000 on farms larger than 50 hectares (Table B-1). Although the number of farm families increased by 80,000 between 1971 and 1981, this increase occurred entirely in the small farm category; the number of medium and large farms did not change (see Tables B-1 and B-2).

Even though families on small farms accounted for about 80 percent of all farms in 1971 and 1981, they cultivated only 12 to 13 percent of total hectares. Large farms constituted about 2 percent of all farms, but cultivated over half of the total hectares (see Tables B-1 and B-2).

### 3. SMALL FARMERS AND RURAL DWELLERS

The basic unit of agricultural production in the Dominican Republic is the farm domestic group, which usually consists of a farmer, his wife, and their children. The most frequently encountered case is that of a farmer, his wife, and five children. Households are located either at the farm site or some distance away -- families may even live in an urban area and commute to the fields daily. The fields may be worked by the farmer and additional labor hired on a part-time basis (this is the usual pattern); the fields may be worked exclusively by the farmer and his family members; or the farmer may own a small farm and arrange for a sharecropper to work the field.

Three factors determine the choice of commodity to be grown: (1) what was grown previously, (2) what can be grown, and (3) what will provide the maximum return either in terms of food for the family unit or income from sales. Most farmers express

reluctance to venture into production of a crop that is different from the traditional pattern. The Dominican farmer is quite averse to taking risks and continually tries to reduce uncertainties. Most farmers appeared skeptical about new technologies, but at the same time they expressed appreciation for the technicians and professionals from the Ministry of Agriculture.

Table B-1. Farm Size Distribution in the Dominican Republic, 1981  
(rural population = 2.7 million)

Farm Size (hectares)	Farms		Hectares	
	Number	Percentage	Number	Percentage
4.9	315,000	81.7	324,000	12.2
5-49.9	63,000	16.5	867,000	32.6
50	7,000	1.8	1,469,000	55.2
Total	385,000	100.0	2,660,000	100.0

Source: Oficina Nacional de Estadística, 1981.

Table B-2. Farm Size Distribution in the Dominican Republic, 1971

Farm Size (hectares)	Farms		Hectares	
	Number	Percentage	Number	Percentage
4.9	235,000	77.1	350,000	12.9
5-49.9	63,000	20.6	814,000	24.9
50	7,000	2.3	1,556,000	57.2
Total	305,000	100.0	2,720,000	100.0

Source: Oficina Nacional de Estadística, 1971.

The women in the farm households contribute a considerable amount of labor to crop production. The great majority of women interviewed in the southwestern region report helping their husbands in the field at least three times weekly. Younger children are relegated to the care of older siblings; the usual pattern is for the girls to care for them. Boys above the age of 10 to 12 may work with their fathers or in the fields of neighbors, either for wages or as part of a reciprocal labor agreement.

In the south-central region, women provide the bulk of labor in harvesting coffee, because the coffee harvest occurs at a time of the year when many men are harvesting their own crops. Coffee harvesters are paid in accordance with the quantities that they harvest, so women are not necessarily paid less than men and they do not represent a cheaper source of labor to the farmers. Other reasons for the predominance of female labor in the coffee harvest are that it is not a physically demanding type of labor and it is something that women have traditionally done.

The productive organization of small farms varies considerably, but three distinct productive styles can be distinguished: (1) households producing only food that is consumed by their members, (2) households producing their own food and cash crops, and (3) households producing only cash crops. The pattern of production encountered by the evaluation team was primarily that of households that produce their own food plus cash crops. The food crops include yuca, plantains, bananas, avocados, papaya, onions, and beans. The cash crops are peanuts, cacao, coffee, tobacco, and sorghum.

Farm families that produce food only for their own consumption are the poorest. They do not sell because they produce no surplus. In the Cibao and in the eastern regions, these families live on very small farms, and at least one member of the family is engaged full time as a wage earner.

The overwhelming majority of small farmers produce food for their own consumption and sell portions for cash. Also, most seek wage employment during some portion of the year. The level of marketed surplus varies from farm unit to farm unit; however, it was observed that farmers in the Cibao sold the greater portions of their crops and consumed less of their own produce.

Although the most frequently encountered pattern of small farm production is one in which a farmer plants several commodities, some of which he consumes outright and some of which he sells, there are those who sell almost all of their own crops for cash. These are usually farmers who grow a single commodity, and as such, they represent small-scale commercial farming enterprises. Rice farmers generally are the most commercialized of the food crop producers and usually consume only a very small portion of their production. Many have small household gardens in which they may grow bananas, yuca, other fruit, or corn, but

most prefer to purchase their food at a local store.

The more commercialized a farming operation, the greater are its requirements for labor. Farmers have traditionally depended on their children to provide this labor, and although this pattern is still seen, it is less prevalent now than in the past. The following two cases contrast the differing patterns of familial labor use. Emilio S. is a banana farmer living outside of Azua. He is 56 and has had 5 wives and 19 children. "Everyone works. If they don't want to work I will kick them out. I don't hire workers because that is why a man has children." Enrique Z. lives in a house on the farm outside of Dajabon where he is employed. He earns RD\$3 per day. He is allowed to grow vegetables around his house. He has a wife and six children. "Sometimes my oldest son helps me with my work. He is 19 now and wants to go to town to find work. It will be difficult for me when he goes." Most small farmers, however, contract and pay for labor on a daily basis. The daily wage may be as low as RD\$2 or as high as RD\$7.50, depending on the skills required.

There are two resident labor forces in the rural areas of the Dominican Republic, landless Dominicans and Haitian immigrants. The Haitians are paid lower wages and consequently live under more impoverished conditions. They may live in camps owned by a large commercial farm where they are employed seasonally, or in a community among Dominicans. There does not appear to be any conflict among these rural laborers, albeit the Haitians appear to be quite endogamous and prefer to speak their French Creole instead of learning Spanish.

One of the most remarkable features observed in these communities was the degree of malnutrition among the Haitian children. The differences are striking because the Haitian children are so poorly nourished in comparison with the Dominicans. As one Haitian woman told us, "We live a miserable existence. It is all misery. Our men are frequently cheated for their wages. We never have enough to feed or clothe our children. If we complain we will be deported, and if we are deported we will starve for sure in Haiti. It is even worse there."

Another group of agricultural laborers lives in the urban areas. Many of these people report that they were small farmers who moved into the towns after the destruction caused by the hurricanes. An effect of the hurricanes and subsequent assistance programs was the elimination of many of the smaller, more marginal farmers; they migrated to the towns where they were resettled under temporary arrangements. It appears that these temporary arrangements were improvements from their previous conditions, because they have stayed in the towns. Many now sell their labor in the rural areas while maintaining their residences in the towns.

The capital needs of small farmers for production have traditionally been met from their wage earnings; from selling

their surplus crops; and from small loans from relatives, neighbors, and others. Most farmers interviewed reported that they saw little advantage to increasing their indebtedness by obtaining commercial credit. Several farmers simply noted that the loans created greater financial burdens. The financial burden of which most farmers complain is the time required to carry out the loan transactions. "If I go to the bank I have to wait. Then, I have to come back. Then I have to wait again. The loans are never available when you need them, and it is easier to get the money from someone else." A few express the fear that the uncertainties of agricultural production may send them into further debt. "If I lose my crop, I lose my crop. But if I have a loan to repay too, then I could lose everything."

The rice farmers of the Cibao also complain about time required to obtain commercial loans. Most rice farmers reported that they did not use the full amount of the loans for which they had qualified. The most common complaint heard throughout the Cibao concerned the inefficiency of the Agricultural Bank's procedures and the costs that exacts in time lost for the farmers. Also, most rice farmers in the Cibao report using noninstitutional credit along with that of the Agricultural Bank, finding it cheaper, more readily available, and more dependable.

The marketing system used by small farmers selling produce other than rice, peanuts, and other commodities purchased by Government enterprises (e.g., INESPRES) is one dependent on "intermediaries." The farmers frequently depict the intermediary as an exploiter, although the intermediary must pay his own transportation costs and make small loans to farmers. The farmers have an elaborate and effective information network and are keenly aware of what their produce sells for in outside markets in the local towns or in the capital or other major cities.

#### 4. CONCLUSIONS

The production of food crops in the Dominican Republic is complex. Food production as an activity pursued by small farmers has been a marginal activity to the production of large-scale cash crops on plantations. It is difficult to characterize the Dominican small farmers; their economic viability, their household organization, and their productive capacities vary from region to region and fluctuate with the commodities grown.

#### APPENDIX C

##### STATISTICAL TABLES

Table C-1. Average Annual Growth Rate for Output of Selected Commodities in the Dominican Republic, 1971-1981

Commodity	Average Annual Growth Rate
Rice	8.99
Milk	2.72
Poultry	9.54
Maize	4.67
Sorghum	18.36
Beans	7.60
Plantains	-0.05
Coffee	5.51
Cacao	-0.99
Tobacco	12.02
Beef	5.15
Sugar	-0.10

Source: D.W. Larson, "The Effect of Price and Credit Policies on Dominican Republic Agriculture" (draft), September 1982.

Table C-2. Number of Farms in the Dominican Republic, by Crop, 1971

Crop	Number of Farms
Rice	29,142
Corn	84,250
Red Bean	37,589
Peanuts	37,535
Sugar Cane	3,444
Plantain	88,082
Potato	1,238
Onion	1,054
Coffee	94,287
Cocoa	33,686
Tobacco	34,851
Cassava	63,003
Sweet Potato	32,340
Canning Tomato	1,084

Source: Oficina Nacional de Estadística, República Dominicana in Cifras, vol. 9, 1980, p. 51.

Table C-3. Agricultural Bank Loans by Land Area, 1975, 1980 and 1981

Area (tareas){a}	Number	Value Percentage	(RD\$ 1000's)	Percentage
---------------------	--------	---------------------	---------------	------------

1975

1-10	2,022	3.7	899.9	1.2
11-50	29,526	54.7	16,610.8	21.3
51-100	10,895	20.2	14,460.6	18.5
101-250	2,426	4.5	5,225.6	6.7
251-500	732	1.4	4,224.4	5.4
501-1,000	274	0.5	3,839.6	4.9
1,001-5,000	143	0.3	7,700.1	9.9
5,001-10,000	6	--	57.6	0.1
10,001-	2	--	1,278.0	1.6
Unspecified	7,944	14.7	23,737.8	30.4
Total	53,970	100.0	78,034.4	100.0

1980

1-10	3,076	4.4	5,920.1	3.1
11-50	26,069	36.9	30,195.9	16.0
51-100	23,160	32.8	32,195.9	17.3
101-250	5,361	7.6	20,934.4	11.1
251-500	3,310	4.7	19,566.9	10.4
501-1,000	1,380	1.9	20,622.1	10.9
1,001-5,000	1,747	2.5	18,640.7	9.9
5,001-10,000	93	0.1	2,169.2	1.1
10,001-	66	0.1	578.5	0.3
Unspecified	6,366	9.0	37,465.0	19.9
Total	70,628	100.0	188,288.7	100.0

1981

1-10	7,696	21.0	33,790.9	22.6
11-50	10,020	27.4	35,741.3	23.9
51-100	3,158	8.6	11,383.5	7.6
101-250	1,852	5.1	5,340.6	3.6
251-500	812	2.2	3,608.4	2.4
501-1,000	3,425	9.4	15,368.7	10.3
1,001-5,000	7,866	21.5	38,729.9	25.9
5,001-10,000	21	--	56.6	0.1
10,001-	140	0.4	246.4	0.2
Unspecified	1,622	4.4	5,080.8	3.4
Total	36,612	100.0	149,347.1	100.0

-----  
{a} A tareas is a land measurement equal to one-sixteenth of a hectare.



Source: Agricultural Bank of the Dominican Republic, Memoria del Ejercicio 1975, 1980, 1981, 1982.

Table C-4. Total Agricultural Bank Loans, 1974, 1975, 1979, and 1980

	Rice	Beans	All Crops
1974			
Number	11,425	3,737	39,071
Value{a}	22,101	1,216.1	44,587.9
Tareas{b}	988,890	158,087	2,523,503
1975			
Number	13,066	3,965	45,588
Valuea	34,691.8	1,486.3	55,099.6
Tareas{b}	1,096,960	180,579	2,523,503
1979			
Number	12,435	6,535	59,126
Value{a}	55,506.6	8,123.4	121,186.2
Tareas{b}	1,310,044	509,607	5,192,302
1980			
Number	12,079	5,228	64,014
Value{a}	59,363.3	7,684.6	145,456.2
Tareas{b}	1,658,370	322,494	5,413,412

-----  
{a} In thousands of RD\$.

{b} A tareas is a land measurement equal to one-sixteenth of a hectare.

Source: Banco Agricola de la Republica Dominicana, Memoria del Ejercicio, 1975, 1980, 1981, 1982.

Table C-5. Production, Consumption, Imports, and Marketed Quantities of Rice in the Dominican Republic, 1973-1982 (in thousands of metric tons)

	INESPRES	
Domestic	INESPRES	Domestic

Year	Production	Consumption	Sales	Purchases	Imports
1973	177.3	217.6	88.6	63.6	29.6
1974	197.0	244.1	197.4	149.0	72.4
1975	210.6	259.5	197.6	138.9	49.4
1976	210.8	247.1	203.1	143.6	31.6
1977	200.9	251.8	215.1	175.6	64.4
1978	227.8	222.3	191.2	188.0	10.4
1979	258.1	274.4	252.4	218.4	0.0
1980	254.1	291.3	260.8	230.5	40.5
1981	258.5	257.7	236.7	221.6	62.9
1982	254.4	281.7	223.8	214.1	0.0

Year	Imports as % of Consumption	INESPRESales as % of Consumption
1973	13.6	40.7
1974	29.7	80.9
1975	19.0	76.1
1976	12.8	82.2
1977	25.6	85.4
1978	4.7	86.0
1979	0.0	92.0
1980	13.9	89.5
1981	24.4	91.8
1982	0.0	79.4

Source: INESPRES, Plan Operativo, 1983.

## APPENDIX D

### METHODOLOGY

The impact evaluation of the Agricultural Services Loans I and II to the Dominican Republic was undertaken in three phases. A first phase consisted of a thorough review of extensive documentation provided by AID/Washington, The World Bank, Sigma One Corporation, and the USAID Mission. These documents included project papers, interim evaluations, agricultural sector reports, World Bank mission reports, and several economic and agricultural analyses based on econometric techniques. The documentation served as the basis for identification of issues and working hypotheses. A second phase consisted of a refinement of hypotheses through interviews of key personnel at USAID and at various levels within public sector institutions in the Dominican Republic. Included in this refinement phase was a series of interviews with key informants

who had been high-level officials within the Government during the design and execution of the loan projects, or who are persons known to be highly knowledgeable and influential within the agricultural sector or the Government. A third phase consisted of 2 weeks of fieldwork for verification of the principal issues. The fieldwork included site visits to all the agricultural production regions of the country. Efforts were undertaken to interview farm households at all points of the welfare and resource endowment spectrum. Rural household members were interviewed by a team consisting of an anthropologist, an agricultural economist, and a sociologist. The team members then sought to achieve consensus regarding the interpretation of the responses provided by the household members. At the same time, an agriculturalist visited the production areas to obtain information on the functioning of product and factor markets and the role of the public institutions in these markets.

The impressions from these site visits were compiled into field reports and debriefings. These then served as the basis for a careful search of the documentation and secondary data for corroboration or rejection of specific interpretations and conjectures. Where the data permitted, or the analyses were available, econometric methods were used to measure the impacts. For example, time series analyses of rice yields revealed no significant impact from the subsidized credit itself. In other instances, the econometric results of other scholars were used as input into the analysis (e.g., Roe et al., 1982; Quezada, 1981; Bibliography for full references). For policy analysis purposes, international prices were used as references for measuring the effects of distortions.

## BIBLIOGRAPHY

- Adams, D.W. and A.A. Pablo. Group Lending to the Rural Poor in the Dominican Republic: A Stunted Innovation. January 1980.
- Adams, D.W. "The Recent Performance and Rural Financial Markets in the Dominican Republic and Suggestions for Future AID Programs in Agricultural Credit" (Draft). August 1979.
- Adams, D.W. and G.I. Nehman. "Interest Rates, Borrowing Costs and Agricultural Loan Demands" (Draft). January 1976.
- Adams, D.W. and J.R. Ladman. "Assisting Rural Poor Through Financial Market Activities in the Dominican Republic" (Draft). September 1975.
- AITEC, Pisces, Phase II. "Assisting the Smallest Scale Economic Activities of the Urban Poor" (Draft).
- Anderson, Kent. Economic Development in the Dominican Republic: A Record of the Past and Projections for the Future (Draft). USAID, 1970.
- Banco Agricola de la Republica Dominicana. Memoria del Ejercicio,

- 1975, 1980, 1981, 1982.
- Banco Central de la Republica Dominicana. Cuentas Nacionales, P.N.B., 1976-1980. August 1982.
- Banco Central del la Republica Dominicana. Metodologia para el Calculo del Indice de Precios al Consumidor en la Republica Dominica. (2nd ed.). Dominican Republic, 1982.
- Banco Central de la Republica Dominicana. Estrategia Para la Implementacion de la Ley Agroindustrial.
- Bell, T.N. End of Tour Report. November 1967.
- CENDA. Costos de Produccion y Rentabilidad de los Cultivos. Dominican Republic, 1981.
- Crouch, L.A. Dessarrollo del Capitalismo en el Campo Domincano. Instituto Superior de Agricultura, 1978.
- Crouch, L.A. and A. de Janvry. La Base Clasista del Abastecimiento Agricola. Instituto Superior de Agricultura, 1980.
- Crouch, L.B. La Agricultura: Analisis, Instituciones y Accion. Instituto Superior de Agricultura. August 1981.
- Culbertson, R., E. Jones, and R. Corpeno. Private Sector Evaluation: The Dominican Republic. AID Special Study. Washington, DC: U.S. Agency for International Development, June 1983.
- Departamento de Estudios Economicos. Cuentas Nacionales Producto Nacional Bruto, 1976-1980. Dominican Republic. "Effects of Price Control Policies (DR)" (Draft). July 1982.
- Espaillet, M.V. La Pobreza y el Desarrollo Dominicano. Instituto Superior de Agricultura, July 1978.
- Franklin, D.L. Agricultural Incentives in the Dominican Republic. Sigma One Corporation, July 1983.
- Fundacion Dominicana de Desarrollo. Estudio de Factibilidad Programa de Micro Empresas (2 vols.)
- Gleijeses, Pero. The Dominican Crises: The 1965 Constitutionalist. Baltimore, MD: Johns Hopkins University Press, 1978.
- Guzman, Jose Miguel. La Encuesta de Mano de Obra en Santo Domingo. Dominican Republic, February 1983.
- Herrero, Jose A. Estabilizacion y Estancamiento: Apuntes Sobre el Deterioro Economico Domincano, UCMM. July 1982.
- INCAE, San Jose de Ocoa. 1982.
- INCAE, Plan Sierra (A). 1982.

INCAE, Plan Sierra (B). 1982.

Instituto de Establizacion de Precios (INESPRE). Boletin Estadistico. January 1983.

Instituto Superior de Agricultura. El Valle de Azua. 1982.

Instituto de Establizacion de Precios. Plan Operativo del 1983. (2 vols.). January 1983.

Instituto Superior de Agricultura. Autosuficiencia en Arroz en la Republica Dominicana.

Instituto Superior de Agricultura. Analisis Economico de Precios, Subsidios e Impuestos en la Produccion y Consumo de Arroz en la Republica Dominicana.

Instituto Superior de Agricultura. CEA-FRUDOCA (B). 1982.

Instituto Superior de Agricultura. Desarrollo del Capitalismo en el Campo Dominicano, Politica Agraria, Pobreza Rural y Crecimiento Agricola, August 1979.

Instituto Superior de Agricultura. Foresta en Republica Dominicana. 1981.

Instituto Superior de Agricultura. Industria Azucarera en la Republica Dominicana Caso A: El Tiro de la Cana. 1982.

Instituto Superior de Agricultura. Industria Azucarera en la Republica Dominicana Caso B: El Corte Mecanizado. 1982.

Instituto Superior de Agricultura. Quezada, Thesis, Endogeneous Agricultural Price and Trade Policy in the Dominican Republic. August 1981.

Instituto Superior de Agricultura. Reduciendo Importaciones de Trigo en la Republica Dominicana. 1982.

Instituto Superior de Agricultura. Semillas de Habichuela en Republica Dominicana. 1981.

Ladman, J.R. and D.W. Adams. The Rural Poor and the Recent Performance of Formal Rural Financial Markets in the Dominican Republic. OSU, February 1978.

Larson, D.W. "The Effect of Price and Credit Policies on Dominican Republic Agriculture" (Draft). September 1982.

Mandera, Patria. Food Consumption in Santo Domingo, Comparing 1969, 1976/77. Dominican Republic.

Mann, Arthur J. Agricultural Price Stabilization in a Developing Economy: The Case of the Dominican Republic.

Murphrey, J. Assignment Report -- Market Project Development

- Dominican Republic. October 1981.
- Revolt and American Intervention. Baltimore, MD: Johns Hopkins University Press, 1978.
- Perez Cuevas, L.E. "Algunas de Servaciones Solore el Vol Del Instituto Superior de Agricultura en el Desarrollo Rural y Agropecuario" (Draft). December 1982.
- Quezada, Norberto. Endogenous Agricultural Price and Trade Policy in the Dominican Republic. Ph.D. dissertation, Purdue University, August 1981.
- Riordan, James T. et al. Evaluation of Agricultural Sector Planning Activities in Latin America and the Caribbean. ABT Associates, Inc., June 1982.
- Roach, William E. Financial Evaluation of the Agricultural Bank of the Dominican Republic (Draft). June 1979.
- Roe, Terry. The Effect of Trade and Currency Exchange Rate Policy on the Dominican Rice Economy: An Econometric Analysis. The University of Minnesota, October 1982.
- Rosario, G. del. Costos de Produccion y Rentabilidad de los Cultivos, April 1981. [Dominican Republic: The Macro Economic Situation (Draft). August 1983.]
- Scobie, G.M. and D.L. Franklin. "The Impact of Subsidized Credit Programmes in Developing Agriculture", Australian Journal of Agricultural Economics and Marketing. April 1977.
- Secretaria de Estado de Agricultura. Programa Nacional de Desarrollo Agricola para el Pequeno Agricultor. Dominican Republic, 1975.
- Secretaria de Estado de Agricultura. El Cacaotalero. Dominican Republic, March 1983.
- Secretaria de Estado de Agricultura. Desafio y Oportunidades de la Presente Decada. Dominican Republic, December 1981.
- Secretaria de Estado de Agricultura. Consideraciones Sobre Presupuesto. 1983.
- Secretaria de Estado de Agricultura. Memoria Annual, 1982. Dominican Republic.
- Secretaria de Estado de Agricultura. Estudio Sobre Uso del Credito en la Republica Dominicana, dic., 1975.
- Senaues, Benjamin, Terry Roe, and Duty Greene. An Analysis of Food Grain Price and Trade Policy in the Dominican Republic. University of Minnesota, October 1982.

- Servicios Tecnicos del Caribe. Evaluacion de los Programas de Credito Supervisado de la Secretaria de Estado de Agricultura de la Republica Dominicana Credito para Pequenos Agricultores del Banco Agricola de la Republica Dominicana. December 1978.
- Servicios Tecnicos del Caribe. Sobre la Evaluacion Financiera del Banco Agricola de la Republica Dominicana y los Efectos del Establecimiento de Limites Maximos a Prestar. January 1976.
- Texas A & M University. The Dominican Republic Agricultural Marketing Relative to the Caribbean and United States Trade. 1969.
- Texas A & M University. Agricultural Development in the Dominican Republic, April 1965-June 1973.
- Universidad Catolica Madre y Maestra. Simposium Sobre la Ley 409 de Incentivo Agroindustrial, November 1982.
- University of Minnesota. "Analysis of Food Grain Price of Trade Policy in the Dominican Republic" (Draft). October 1982.
- University of Minnesota. An Overview of the Food System in the Dominican Republic: Planning, Policies and Constraints, 1981.
- U.S. Agency for International Development. Agricultural Sector Assessment for the Dominican Republic. March 1974.
- U.S. Agency for International Development. Dominican Republic -- Agricultural Sector Loan I. 1974.
- U.S. Agency for International Development. Dominican Republic -- Agricultural Sector Loan II. 1976.
- U.S. Agency for International Development. Dominican Republic Farmer Agricultural Rehabilitation. (Project Paper), June 1980.
- U.S. Agency for International Development. Memorandum of Understanding for the Use of the Proceeds Generated Under the PL-480, Title I Agreement. May 1982.
- U.S. Agency for International Development. "Small Farmer Credit in the Dominican Republic" (Draft). February 1976.
- Welles, S. Naboth's Vineyard: The Dominican Republic 1844-1924. Holt, 1935.
- World Bank. Informe Sobre la Posibilidad de Abastecimiento a Santo Domingo Con Aguas Procedentes del Rio Nizao y Con un Canal Continuo de 8 m3/s. 1981 CDSS FY 1985 (revised). Dominican Republic: June 1983.
- World Bank. Economic Memorandum on the Dominican Republic. Report

No. 3446-DO. May 1981.

World Bank. Instituto de Estabilizacion de Precios. Dominican Republic, 1982.

World Bank. Agricultural Sector Review. February 1981.

World Bank. Dominican Republic -- Major Concerns and Policy Recommendations. February 1980.

World Bank. Economic Adjustments in the Dominican Republic. August 1983.